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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,505	06/18/2001	Yoshiya Sakaguchi	43890-522	1376

20277 7590 09/27/2004

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EXAMINER	
GOFF II, JOHN L	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/868,505	SAKAGUCHI ET AL.	
	Examiner	Art Unit	
	John L. Goff	1733	

KB

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 July 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13,16-20,23-30 and 32-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *20,23 and 37* is/are allowed.

6)☒ Claim(s) *1-13,16-19,24-30,32-36 and 38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the amendment filed on 7/6/04. The previous 35 USC 112 rejections have been overcome.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. Claims 1-13, 16-19, 24, 29, 30, 32-36, and 38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1 and 32 require a center portion of both the upper and lower rigid bodies to be movable. Claims 36 and 38 require a center portion of the upper rigid body to be movable. In view of the interview of 4/14/04 and appellants arguments this limitation is interpreted as requiring an independent portion of the upper or lower rigid body, i.e. the center portion, movable relative to/independent of the other portions of the rigid body. Regarding support for these limitations appellants refer to Figures 6-7 and 9-11 and their corresponding sections of the specification. However, after reviewing the Figures and specification there is no disclosure of either the upper or lower rigid bodies having a movable center portion. A review of Figures 6-7 and 9-11 show the upper and lower rigid bodies before and after pressing wherein the center and edge portions of the upper and lower rigid bodies have

aligned shading both before and after pressing such that a movable center portion is not present. If the new matter were removed from claims 1-13, 16-19, 24, 29, 30, 32-36, and 38 the rejections set forth below over those claims would be applicable.

4. Claims 26 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 26 and 28 recite the limitation "said elastic body" in line 2. There is insufficient antecedent basis for this limitation in the claims. It is suggest to delete "said elastic body" and insert therein - - said elastic bodies - -.

Claim Rejections - 35 USC § 103

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-11, 13, 16-19, 24-30, 32-36, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hass et al. (U.S. Patent 5,573,622) in view of Pieterse et al. (U.S. Patent 5,268,415) and Kodera (GB 2274810) and optionally in view of Gauci et al. (U.S. Patent 5,478,420).

Hass et al. disclose a method and apparatus for laminating multilayer structures used in the electronics industry (Column 1, lines 12-14 and Column 2, lines 26-29). Hass et al. teach the laminating apparatus of their invention is advantageous over prior art laminating devices such as rigid platens for laminating two sheet layers (e.g. green sheets with or without a cavity) separated by a conductive layer (e.g. conductive paste) as the laminating apparatus of the invention prevents distortion of the final laminate (Column 9, lines 6-19). Hass et al. teach a rectangular, multilayer stack of self-supporting green sheets having asperities on a surface thereof wherein the sheets are formed from a ceramic material and a binder in a conventional process (Column 4, lines 57-65). Hass et al. teach a method for laminating the multilayer structure comprising placing the multilayer stack of self-supporting green sheets on a rigid plate, placing a deformable, resilient body on the stack, placing an upper rigid body having a cavity over the resilient body, and applying heat, e.g. at 150 °C, and pressure to the stack causing the binders within the stack to become tacky, i.e. soft, and the layers of the multilayer structure to bond together (Figures 2 and 3 and Column 1, lines 43-46 and Column 3, lines 12-25 and Column 4, lines 40-47 and 57-65 and Column 5, lines 46-55 and Column 6, lines 36-39 and 49-53 and Column 8, lines 37-41 and 59-61). Hass et al. further teach placing a barrier/release sheet between the multilayer stack and the resilient body and preheating the resilient body, stack, and rigid body having a cavity prior to lamination (Column 6, lines 24-26 and 32-37 and Column 7,

lines 15-21). In an alternate embodiment, Hass et al. teach using a resilient body with a greater width than the multilayer stack, and Hass et al. teach placing the multilayer stack between two resilient bodies rather than one resilient body and a rigid plate (Figure 4 and Column 7, lines 56-58 and 63-67 and Column 8, lines 1 and 4-9). It is noted the rigid body having a cavity provides a framework for covering the multilayer stack (Figures 2 and 3), and the resilient body provides a framework for covering the multilayer stack in the alternate embodiment (Figure 4).

Regarding claims 1, 19, 32, 36, and 38, Hass et al. teach laminating the multilayer stack using the binder contained in the sheets of the stack. Hass et al. teach the binder becomes tacky, i.e. soft, during laminating, e.g. applying pressure and heat up to 150 °C, such that Hass et al. meet the limitation of heating said first laminate at a temperature higher than the temperature at which the polyolefin (binder) is softened. Gauci et al. are further cited as an optional showing of how the laminating taught by Hass et al. occurs, i.e. bonding by softening/melting of the binder in the green sheets. Gauci et al. disclose a process for laminating a multilayer stack of green sheets using a plug (analogous to the elastic body taught by Hass et al.) and press. Gauci et al. teach laminating the multilayer stack in the plug and press by compressing the multilayer stack under temperature, e.g. 60-90 °C, and pressure suitable to cause the ceramic layers to flow together and laminate to each other, i.e. the green sheets are laminated to each other by softening/melting the binder (the flowable component) in the sheets (Column 1, lines 49-51 and Column 2, lines 18-21 and Column 5, lines 23-38). One of ordinary skill in the art at the time the invention was made would have readily appreciated that the laminating taught by Hass et al. occurs in the same manner as that suggested by Gauci et al., i.e. laminating by softening/melting

the binder in the green sheets, as Gauci et al. disclose a process for laminating a multilayer of green sheets substantially the same as that taught by Hass et al.

Regarding claims 1, 25, and 32, as noted above Hass et al. teach preheating the resilient body, stack, and rigid body having a cavity prior to lamination, and Hass et al. teach placing the multilayer stack between two resilient bodies rather than one resilient body and a rigid plate such that the limitation requiring sandwiching the laminate between opposing preheated elastic bodies is met. Furthermore, it is noted Hass et al. teach a first pressing force application member with an elastic body provided inside of a rigid body, and a second pressing force application member with an elastic body provided on a flat rigid body (Figure 4). Hass et al. are silent as to the second pressing force application member comprising an elastic body provided inside of a rigid body. However, the cavity of the rigid body of the first member extends to enclose the second member, and one of ordinary skill in the art at the time the invention was made would have readily appreciated shortening the cavity of the rigid body of the first member while providing an extension to the cavity of the second member to form a second rigid body having a cavity similar to the first rigid body having a cavity as only the expected results would be achieved.

Regarding claims 1, 18, 25, 27, 29, 32, 36, and 38, Hass et al. are silent as to the specific materials used to make the green sheets. However, it is noted Hass et al. teach the green sheets are formed from a ceramic material and a binder in a conventional process, and Hass et al. are not limited to any particular ceramic or binder materials. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the green sheets taught by Hass et al. well known and conventional green sheets such as those shown for example by

Pieterse et al., i.e. green sheets that comprise polyolefin and inorganic powder and have a porosity of less than 80%, as only the expected results would be achieved.

Regarding claims 1, 16, 24, 25, 27, 32, 36, and 38, Hass et al. are silent as to a specific teaching for depressurizing (i.e. applying a vacuum to) the multilayer structure prior to lamination. However, Hass et al. teach evacuating the air in the multilayer to avoid entrapping air during lamination. Hass et al. further teach the evacuating may be performed by any means known to one in the art. One of ordinary skill in the art at the time the invention was made would have readily appreciated evacuating the air in the multilayer as taught by Hass et al. using a vacuum (depressurized atmosphere) technique as it was well known in the art to evacuate a multilayer using vacuum before, during, and after lamination to remove air from the multilayer as shown for example by Kodera. As to the particular pressure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine/optimize the pressure taught by Hass et al. as modified by Kodera as only the expected results would have been achieved.

Regarding claim 7, Hass et al. are silent as to the surface area of the barrier/release sheet being larger than the contact area between the sheet and the multilayer stack. However, one of ordinary skill in the art at the time the invention was made performing the alternate embodiment (Figure 4) taught by Hass et al. would have readily appreciated using a barrier/release sheet with a surface area larger than the contact area between the sheet and the multilayer stack to ensure the resilient bodies do not adhere to one another.

Regarding claims 25-28, Hass et al. teach an embodiment using upper and lower elastic, resilient bodies that completely enclose the multilayer stack wherein intrinsically the upper body

covers the upper surface and at least a portion of the upper side surface of the multilayer stack and the lower body covers the lower surface and at least a portion of the lower side surface of the multilayer stack (Figure 4 and Column 7, lines 56-58 and 63-67 and Column 8, lines 1 and 4-9).

Regarding claims 27 and 28, Hass et al. teach pressing multiple multilayer stacks simultaneously (Column 7, lines 9-12 and 61-63) and applying a steel plate to the upper surface of each stack to control distribution of the stresses during pressing and ensure the upper surface possesses an adequate surface finish and flatness (Column 6, lines 9-19).

Regarding claim 30, Hass et al. teach any desired number of sheets may be laminated such that it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the number of green sheets to use in the multilayer depending upon the product made as doing so would require nothing more than ordinary skill and routine experimentation.

Regarding claims 32 and 38, Hass et al. are silent as to a barrier/release sheet below the multilayer stack. However, one of ordinary skill in the art at the time the invention was made performing the alternate embodiment (Figure 4) taught by Hass et al. would have readily appreciated using a barrier/release sheet below the multilayer stack to ensure the lower resilient body does not adhere to the multilayer stack.

Regarding claim 33 it is noted Hass et al. teach that the multilayer stack of green sheets may form a cavity or the stack of green sheets may be the same size (Figure 1 and Column 4, lines 53-56), and Hass et al. teach the laminating apparatus of their invention is advantageous over prior art laminating devices such as rigid platens for laminating two sheet layers (e.g. green sheets with or without a cavity) separated by a conductive layer (e.g. conductive paste) as the

laminating apparatus of the invention prevents distortion of the final laminate (Column 9, lines 6-19) such that it appears Hass et al. discloses laminating green sheet stacks without a cavity, i.e. the upper surface of multilayer stack fully covers the lower layers of the stack. In any event, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the laminating apparatus taught by Hass et al. to laminate green sheet stacks both with or without a cavity as only the expected results would be achieved.

Pieterse et al. disclose self-supporting green sheets and a process for making the sheets. Pieterse et al. teach the green sheets comprise inorganic powder and an organic binder, e.g. polyethylene is preferred, and the sheets have porosity of less than 80% (Column 2, lines 48-59 and Column 5, lines 58-60 and Column 11, lines 30-31).

Kodera is directed to a method (and apparatus) for hot-pressing ceramic (green) sheets into a laminate. Kodera teaches the method comprises placing a stack of sheets into a press having upper and lower press platens wherein the upper and/or lower platens have vacuum (air) outlets and elastic sealing sleeves (elastic frame), closing the press to form a hermetically enclosed space containing the stack of sheets, evacuating air from the space by applying vacuum, hot-pressing the sheets under vacuum to form a laminate, and opening and removing the laminate from the hot-press (Figures 1, 4, and 9 and Page 8, lines 21-22 and Page 9, lines 12-13 and Page 10, lines 7-15 and 19-21 and Page 15, lines 17-23 and 26-27 and Page 16, lines 1-2).

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hass et al., Pieterse et al., Kodera, and optionally Gauci et al. as applied above in paragraph 7, and further in view of Natarajan et al. (U.S. Patent 5,759,320).

Hass et al., Pieterse et al., Kodera, and optionally Gauci et al. as applied above teach all of the limitations in claim 12 except for a teaching on using a framework that is equal to or less than the thickness of the multilayer structure. It is noted Hass et al. teach an alternate second embodiment wherein the multilayer does not have a framework (Figure 5 and Column 8, lines 20-22). However, it is known in the art to provide the multilayer with a framework prior to bonding to prevent the green sheets of the multilayer from sliding during lamination as shown by Natarajan et al. One of ordinary skill in the art at the time the invention was made would have readily appreciated incorporating into the alternate second embodiment (Figure 5) taught by Hass et al. as modified by Pieterse et al., Kodera, and optionally Gauci et al. a frame as suggested by Natarajan et al. to prevent the green sheets of the multilayer from sliding during lamination.

Natarajan et al. are directed to a method and apparatus for laminating a multilayer stack of green sheets that contain cavities (asperities) (Column 1, lines 16-21). Natarajan et al. teach a method for laminating the multilayer stack comprising placing a multilayer stack of green sheets on a rigid plate, placing an elastic body on the stack, and applying heat and pressure via a press to the elastic body and the stack to bond the layers of the multilayer structure together (Figures 4-7 and Column 4, lines 65-67 and Column 5, lines 1-5, 9-14, and 66-67 and Column 6, lines 1-5, 7-10, 14-18 and 28-31 and Column 8, lines 8-10). Natarajan et al. further teach placing a frame around the multilayer to prevent the green sheets of the multilayer from sliding during

lamination and placing the stack, elastic body, and press within an environmental enclosure prior to lamination (Column 6, lines 10-14 and Column 8, lines 50-55).

9. Claims 1-11, 13, 16-19, 24-30, 32-36, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Hass et al., Kodera, and optionally in view of Gauci et al.

The admitted prior art discloses it was known to form multilayer ceramic capacitors by a method comprising providing a rectangular, multilayer stack of green sheet materials (e.g. barium nitrate powder and polyethylene with a porosity of 50% or more wherein none of the sheet materials beneath the upper sheet are exposed via the upper surface) separated by internal electrodes (e.g. metallic paste) and laminating the multilayer stack via metallic press plates (Figure 4 and Page 1, lines 20-32 and Page 10, lines 8-23). It would have been obvious to one of ordinary skill in the art at the time the invention was made to laminate the multilayer stack taught by the admitted prior art using the elastic body laminating apparatus taught by Hass et al. as opposed to metallic press plates as Hass et al. teach the laminating apparatus of their invention is advantageous over prior art laminating devices such as rigid platens for laminating two sheet layers (e.g. green sheets) separated by a conductive layer (e.g. conductive paste) in preventing distortion of the final laminate. Hass et al. is described above in full detail.

Regarding claims 1, 19, 32, 36, and 38, the admitted prior art as modified by Hass et al. teach laminating the multilayer stack using the binder contained in the sheets of the stack. Hass et al. teach the binder becomes tacky, i.e. soft, during laminating, e.g. applying pressure and heat up to 150 °C, such that Hass et al. meet the limitation of heating said first laminate at a temperature higher than the temperature at which the polyolefin (binder) is softened. Gauci et al.

are further cited as an optional showing of how the laminating taught by the admitted prior art as modified by Hass et al. occurs, i.e. bonding by softening/melting of the binder in the green sheets. Gauci et al. is described above in full detail. One of ordinary skill in the art at the time the invention was made would have readily appreciated that the laminating taught by the admitted prior art as modified by Hass et al. occurs in the same manner as that suggested by Gauci et al., i.e. laminating by softening/melting the binder in the green sheets, as Gauci et al. disclose a process for laminating a multilayer of green sheets substantially the same as that taught by the admitted prior art as modified by Hass et al.

Regarding claims 1, 25, and 32, as noted above Hass et al. teach preheating the resilient body, stack, and rigid body having a cavity prior to lamination, and Hass et al. teach placing the multilayer stack between two resilient bodies rather than one resilient body and a rigid plate such that the admitted prior art as modified by Hass et al. teach the limitation requiring sandwiching the laminate between opposing preheated elastic bodies is met. Furthermore, it is noted Hass et al. teach a first pressing force application member with an elastic body provided inside of a rigid body, and a second pressing force application member with an elastic body provided on a flat rigid body (Figure 4). Hass et al. are silent as to the second pressing force application member comprising an elastic body provided inside of a rigid body. However, the cavity of the rigid body of the first member extends to enclose the second member, and one of ordinary skill in the art at the time the invention was made would have readily appreciated shortening the cavity of the rigid body of the first member while providing an extension to the cavity of the second member to form a second rigid body having a cavity similar to the first rigid body having a cavity as only the expected results would be achieved.

Regarding claims 1, 16, 24, 25, 27, 32, 36, and 38, the admitted prior art as modified by Hass et al. are silent as to a specific teaching for depressurizing (i.e. applying a vacuum to) the multilayer structure prior to lamination. However, Hass et al. teach evacuating the air in the multilayer to avoid entrapping air during lamination. Hass et al. further teach the evacuating may be performed by any means known to one in the art. One of ordinary skill in the art at the time the invention was made would have readily appreciated evacuating the air in the multilayer as taught by the admitted prior art as modified by Hass et al. using a vacuum (depressurized atmosphere) technique as it was well known in the art to evacuate a multilayer using vacuum before, during, and after lamination to remove air from the multilayer as shown for example by Kodera. As to the particular pressure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine/optimize the pressure taught by the admitted prior art as modified by Hass et al. and Kodera as only the expected results would have been achieved. Kodera is described above in full detail.

Regarding claim 7, Hass et al. are silent as to the surface area of the barrier/release sheet being larger than the contact area between the sheet and the multilayer stack. However, one of ordinary skill in the art at the time the invention was made performing the alternate embodiment (Figure 4) taught by the admitted prior art as modified by Hass et al. would have readily appreciated using a barrier/release sheet with a surface area larger than the contact area between the sheet and the multilayer stack to ensure the resilient bodies do not adhere to one another.

Regarding claims 25-28, Hass et al. teach an embodiment using upper and lower elastic, resilient bodies that completely enclose the multilayer stack wherein intrinsically the upper body covers the upper surface and at least a portion of the upper side surface of the multilayer stack

and the lower body covers the lower surface and at least a portion of the lower side surface of the multilayer stack (Figure 4 and Column 7, lines 56-58 and 63-67 and Column 8, lines 1 and 4-9).

Regarding claims 27 and 28, Hass et al. teach pressing multiple multilayer stacks simultaneously (Column 7, lines 9-12 and 61-63) and applying a steel plate to the upper surface of each stack to control distribution of the stresses during pressing and ensure the upper surface possesses an adequate surface finish and flatness (Column 6, lines 9-19).

Regarding claim 30, Hass et al. teach any desired number of sheets may be laminated such that it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the number of green sheets to use in the multilayer depending upon the product made as doing so would require nothing more than ordinary skill and routine experimentation.

Regarding claims 32 and 38, the admitted prior art as modified by Hass et al. are silent as to a barrier/release sheet below the multilayer stack. However, one of ordinary skill in the art at the time the invention was made performing the alternate embodiment (Figure 4) taught by the admitted prior art as modified by Hass et al. would have readily appreciated using a barrier/release sheet below the multilayer stack to ensure the lower resilient body does not adhere to the multilayer stack.

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art, Hass et al., Kodera, and optionally Gauci et al. as applied above in paragraph 9, and further in view of Natarajan et al.

The admitted prior art, Hass et al., Kodera, and optionally Gauci et al. as applied above teach all of the limitations in claim 12 except for a teaching on using a framework that is equal to

or less than the thickness of the multilayer structure. It is noted Hass et al. teach an alternate second embodiment wherein the multilayer does not have a framework (Figure 5 and Column 8, lines 20-22). However, it is known in the art to provide the multilayer with a framework prior to bonding to prevent the green sheets of the multilayer from sliding during lamination as shown by Natarajan et al. One of ordinary skill in the art at the time the invention was made would have readily appreciated incorporating into the alternate second embodiment (Figure 5) taught by the admitted prior art as modified by Hass et al., Kodera, and optionally Gauci et al. a frame as suggested by Natarajan et al. to prevent the green sheets of the multilayer from sliding during lamination.

Allowable Subject Matter

11. Claims 20, 23, and 37 are allowed.

12. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach or suggest pressing force application equipment comprising a first pressing force application member with a first elastic body provided inside of a first rigid body, the first rigid body including an air outlet and a first elastic frame member disposed on a lower surface thereof, and a second pressing force application member with a second elastic body provided inside of a second rigid body, the second rigid body including an air outlet and a second elastic frame member disposed on an upper surface thereof, wherein the first and second pressing force application members are disposed opposite each other having the capability that when pressed into contact the first and second elastic frame members contact each other.

Response to Arguments

13. Applicant's arguments with respect to claims 1-13, 16-19, 24-30, 32-36, and 38 have been considered but are moot in view of the new ground(s) of rejection. Appellant argues Hass et al. do not disclose or suggest heating the first laminate to a temperature higher than the temperature at which the polyolefin is softened. As noted above, Hass et al. teach the binder becomes tacky, i.e. soft, during lamination wherein laminating includes heating at 150 °C such that the limitation is met. Furthermore, Gauci et al. is cited as exemplary of an analogous lamination process in the art wherein lamination occurs by softening/melting and flowing of the binder in the sheets wherein softening/melting includes heating to soften the binder. As to appellant's arguments that the temperature is not critical to Hass et al., it is noted the disclosure referred to by appellants is to sintering the sheets not laminating them. Appellant further argues Hass et al. do not disclose or suggest maintaining the stack in a depressurized atmosphere prior to and during pressing. As noted above, Hass et al. teach evacuating the air in the multilayer to avoid entrapping air during lamination, and Hass et al. further teach the evacuating may be performed by any means known to one in the art. Kodera is applied as a conventional evacuating technique in the art wherein removing the air includes applying vacuum before, during, and after lamination. As to appellants arguments that Hass et al. teach applying pressure during laminating it is noted the pressure required by Hass et al. is through the elastic body not the atmosphere, and the pressure of lamination taught by Hass et al. is the same as that taught by appellant. Appellant further argues the new limitations of claims 1, 25, 27, and 32 in that Hass et al. do not teach the limitations. See the above new rejections.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571) 272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John L. Goff

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